

CLAIMS

1. A method for producing high-molecular weight microspheres comprising:
 - 5 dissolving or dispersing a high-molecular material in a high pressure fluid containing a supercritical fluid and an entrainer, and spraying the resultant high pressure fluid into a poor solvent to cause rapid expansion.
- 10 2. The method of claim 1, wherein the poor solvent is at least one selected from the group consisting of water, methanol, ethanol, propanol, acetone, liquid nitrogen and a mixture thereof.
- 15 3. The method of claim 1 or 2, wherein the supercritical fluid is selected from the group consisting of carbon dioxide, ammonia, methane, ethane, ethylene and butane.
4. The method of any of claims 1 to 3, wherein the entrainer is an organic solvent that is liquid at ordinary temperature.
- 20 5. The method of any of claims 1 to 4, wherein in the dissolving or dispersing step, at least one of the pressure of the high pressure fluid, the temperature of the high pressure fluid, the amount of the entrainer and the amount of the high-molecular material is controlled.
- 25 6. The method of any of claims 1 to 5, wherein in the rapid expansion step, at least one of the pressure, the temperature, and the type of the

poor solvent is controlled.

7. The method of any of claims 1 to 6, wherein in the dissolving or dispersing step, a core substance is further dissolved or dispersed.

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8. The method of any of claims 1 to 7, wherein the high-molecular weight microspheres are spherical.

9. The method of any of claims 1 to 8, wherein in the rapid expansion
10 step, the entrainer is efficiently removed from the surface of the high-molecular weight microspheres.